Progeria, a model for accelerated aging exhibited by HIV patients?

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Aim

To confirm, among HIV1-infected patients, data from *in vitro* studies showing that antiretroviral therapies (ART) induce an accelerated aging through the same mechanism than genetic laminopathies (progeria) and « physiological » aging, *i.e.* through the synthesis and persistence of farnesylated prelamin A. The perspective is to minimize ART side effects using the same drug combination yet given to treat progeria children in Marseille.

Materials and methods

A multicentric (Marseille, Nice and Montpellier Hospitals) 3 year-long study will analyse 50 HIV1-infected patients without any ART (A group), 100 infected patients receiving ART for at least 12 months (B group) and 50 age- and sex-matched seronegative control subjects. Infected patients will be submitted to 4 successive investigations (M0, M12, M24 and M36).

Biological tests are performed in *Timone Hospital labs* (Marseille): i/ viral load, PBMC isolation, DNA extraction, proviral DNA measurement [*Virology*]; ii/ CD4, CD8, glycemia, insulinemia, HOMA, total-, LDL- and HDL-cholesterol, triglycerides [*Biochemistry labs from the 3 Hospitals*]; iii/ ART assay [*Pharmacokinetics Lab*]; iv/ detection (western blot, immunocytochemistry) of PBMC nuclear, cytosolic and mitochondrial ART targets: A and B lamins, NF-kB and I-kB (proteasome activity), CD36 (glycosylation), mitochondrial Hsp70, ROS production, inner membrane potential, cytochrome C oxidase subunits 2 and 4 [*Cell Biology*]; v/ genotyping the ART targets: prelamin A and B processing proteases, Golgi SREBP-releasing proteases, mitochondrial deoxynucleoside transporters and proteases involved in nuclear-encoded protein import; telomere length [*Molecular Genetics*]. *CIC-UPCET* collaborated to the protocol design, recruits control subjects and is in charge of data statistical treatment.

Results and discussion

The M0 collection just finished. Mitochondrial data will be presented.

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